

WHAT IS CLAIMED IS:

1. A waveguide interconnection apparatus, comprising:
  - a first housing having a first waveguide therein;
  - a second housing having a second waveguide connected to the first
  - 5 waveguide; and
  - a third housing having a third waveguide connected to the second waveguide,
  - wherein a signal propagated from the first waveguide through the second waveguide to the third waveguide is reflected to have a predetermined
  - 10 angle when it passes an interconnecting portion of each waveguide, and
  - at least one of inner connecting portions and outer connecting portions between the first waveguide and the second waveguide, and between the second waveguide and the third waveguide is curved.
- 15 2. The waveguide interconnection apparatus as claimed in claim 1, wherein the signal is an ultrahigh frequency signal.
3. The waveguide interconnection apparatus as claimed in claim 1, wherein the second waveguide separately consists of a first portion connected
- 20 to the first waveguide, a second portion connected to the first portion, and a third portion connected to the second portion and the third waveguide.

4. The waveguide interconnection apparatus as claimed in claim 3, wherein the first portion, the second portion and the third portion are made to be curved, linear, and curved, respectively.

5            5. The waveguide interconnection apparatus as claimed in claim 3, wherein the first and third portions are formed to be bonded to a cover after the waveguide is curved at one surface of a rectangular parallelepiped structure made of a conductive material.

10           6. The waveguide interconnection apparatus as claimed in claim 1, wherein the first and third housings are made in such a manner that a rectangular parallelepiped structure made of a conductive material is punched to form rectangular parallelepiped waveguides.

15           7. The waveguide interconnection apparatus as claimed in claim 1, wherein the second housing is made in such a manner that a rectangular parallelepiped structure made of a conductive material is punched to form a rectangular parallelepiped waveguide.

20           8. The waveguide interconnection apparatus as claimed in claim 1, wherein the only outer connecting portion of the inner and outer connecting portions between the first waveguide and the second waveguide is curved, and the only outer connecting portion of the inner and outer connecting portions between the second waveguide and the third waveguide is curved.

9. The waveguide interconnection apparatus as claimed in claim 1,  
wherein the inner and outer connecting portions between the first waveguide  
and the second waveguide, and between the second waveguide and the third  
5 waveguide are curved.

10. A waveguide interconnection apparatus, comprising:  
a first housing having a first waveguide; and  
a second housing having a second waveguide connected to the first  
10 waveguide,

wherein a signal propagated from the first waveguide to the second  
waveguide is reflected to have a predetermined angle when it passes an  
interconnecting portion of the waveguides, and  
at least one of an inner connecting portion and an outer connecting  
15 portion between the first waveguide and the second waveguide is curved.

11. The waveguide interconnection apparatus as claimed in claim 10,  
wherein the second housing is formed to be bonded to a cover after the  
waveguide is curved at one surface of a rectangular parallelepiped structure  
20 made of a conductive material.